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# Draft Cultural Resources Section 106 Technical Report

# GEORGETOWN STEAM PLANT 2011 INTERIM ACTION PROJECT, SEATTLE, WA

August 26, 2011

Prepared for:

Seattle City Light Seattle, Washington

CONTAINS PRIVILEGED INFORMATION – DO NOT RELEASE

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# Draft Cultural Resources Section 106 Technical Report Georgetown Steam Plant 2011 Interim Action Project

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#### 1.0 **INTRODUCTION**

This report was prepared for Seattle City Light (SCL) to address the identification and evaluation of cultural resources within the Area of Potential Effect (APE) for the proposed Georgetown Steam Plant (GTSP) 2011 Interim Action Project (Project). The proposed Project is located in the City of Seattle, in the historic town of Georgetown. The Project area includes 2.8 acres at the steam plant site, between Perimeter Road South and South Warsaw Street, in NE Section 29, Township 24 N, Range 4 E, in Seattle, Washington (Figure 1.1).

#### 1.1 PROJECT PURPOSE AND DESCRIPTION

The GTSP is a National Historic Landmark (NHL) and is also a Seattle City Landmark. Built in 1906, it produced electricity for a relatively short period of time. The steam plant occupies a 2.8-acre parcel at the northern end of Boeing Field.

SCL will conduct interim cleanup activities at the GTSP property under an agreed order with the Washington Department of Ecology. The project will include the excavation and offsite disposal of approximately 8,000 cubic yards of soil and replacement with certified clean material. Interim actions will occur simultaneously on adjacent property which is leased from the City of Seattle and King County by The Boeing Company. Construction activities will be coordinated including the use of a single construction contractor. However, property leased by Boeing is not addressed by this report except to the extent that a portion of it is used as a staging area for work on the GTSP.

The primary objective of the interim action on GTSP property is to remove soils containing elevated concentrations of PCBs from the southwestern corner of the GTSP property, known as the low lying area (LLA). Secondarily, the interim action will remove soils contaminated with petroleum hydrocarbons in the LLA and in the former Fuel Tank Area located west of the southern end of the GTSP building, and soil containing other chemicals exceeding interim action levels from other portions of the site. Excavation depths will range from a minimum of 18 inches to a maximum of 15 feet. The City's objective is to conduct an interim action that minimizes the need for additional remediation to the largest extent practicable.

Removal and management of soil with PCB concentrations greater than or equal to 50 mg/kg is regulated by the US Environmental Protection Agency (EPA) under the Toxic Substances Control Act (TSCA). This work will be conducted in accordance with TSCA provisions for risk-based cleanup and disposal of PCB remediation waste [40 CFR § 761.61(c)]. The excavation and management of soils impacted by other chemicals, including PCBs at concentrations less than 50 mg/kg, will be conducted in accordance with the Washington State Model Toxics Control Act (MTCA).

The EPA, as the lead federal agency, will submit the APE letter to the Washington Department of Archaeology and Historic Preservation (DAHP).

Cardno ENTRIX's responsibilities include an archaeological and architectural resources survey, a determination of Project effects, recommending mitigation measures, and preparation of an Unanticipated Discoveries and Construction Monitoring Plan. This report provides a discussion of applicable cultural resources regulations of State and Federal agencies (Section 2.0), a description of the Affected Environment (Section 3.0), the study Methodology used to complete the report (Section 4.0), Survey Results (Section 5.0), Project Effects (Section 6.0), Mitigation Measures (Section 7.0), and References Cited in the report. The Unanticipated Discoveries and Construction Monitoring Plan is provided in Appendix B. This report was prepared in compliance with Section 106 of the National Historic Preservation Act (NHPA), the Washington State Environmental Policy Act (SEPA), and all local City of Seattle and King County regulations.

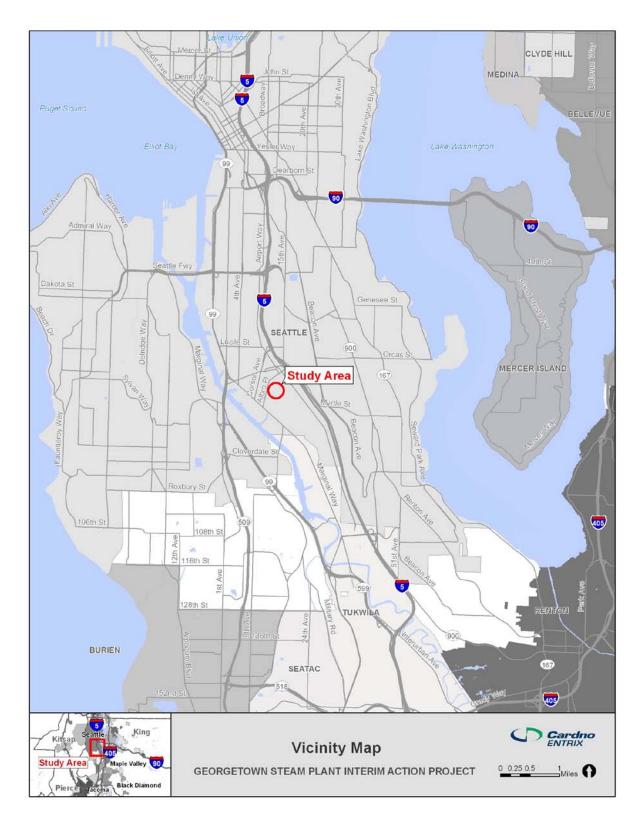


Figure 1-1. Vicinity Map

# 2.0 CULTURAL RESOURCES REGULATIONS AND AGENCY COORDINATION

The Project is being conducted in compliance with Section 106 of the NHPA, the Washington State Environmental Policy Act (SEPA), and all local City of Seattle and King County regulations.

The following discussion briefly describes the federal and state environmental laws and regulations that govern the cultural resources review process for this Project.

#### 2.1 FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS

Section 106 of the NHPA of 1966, as amended, requires that any federal or federally-assisted project or any project requiring federal licensing or permitting take into account the effect of the undertaking on historic properties listed in or eligible for the National Register of Historic Places (NRHP).

The NRHP, created under the NHPA, is the federal list of historic, archaeological, and cultural resources worthy of preservation. Resources listed in the NRHP include districts, sites, buildings, structures, and objects that are significant in American history, prehistory, architecture, archaeology, engineering, and culture. The NRHP is maintained by the National Park Service (NPS) on behalf of the Secretary of the Interior. The DAHP in Olympia, Washington administers the statewide NRHP program under the direction of the State Historic Preservation Officer (SHPO). The NPS has developed the NRHP Criteria for Evaluation to guide the selection of properties for listing in or a determination of eligibility for the NRHP. The following criteria are standards by which every property that is considered for listing in the NRHP is evaluated:

The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, material, workmanship, feeling, and association, and:

**Criterion A**: Are associated with events that have made a significant contribution to the broad patterns of our history; or

*Criterion B*: Are associated with the lives of persons significant in our past; or

**Criterion C**: Embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components make lack individual distinction; or

**Criterion D**: Has yielded, or may be likely to yield, information important in prehistory or history (36 CFR Part 60).

Archaeological sites are primarily assessed under Criterion D. Buildings less than 50 years old do not meet the NRHP criteria unless they are of exceptional importance, as described in Criteria Consideration G (36 CFR Part 60) and the NPS Bulletin No. 22, "How to Evaluate and Nominate Potential National Register Properties That Have Achieved Significance Within the Last 50 Years.

The NHPA also requires special procedures for the protection of National Historic Landmarks (NHLs) which are historic and archaeological sites, buildings, and objects designated by the Secretary of the Interior under the authority of the Historic Sites Act of 1935. NHLs "possess exceptional value as commemorating or illustrating the history of the United States."

Section 110(f) of the NHPA requires that Federal agencies exercise a higher standard of care when considering undertakings that may directly and adversely affect NHLs. The law requires that agencies,

"to the maximum extent possible, undertake such planning and actions as may be necessary to minimize harm to such landmark." In those cases when an agency's undertaking directly and adversely affects an NHL, or when Federal permits, licenses, grants, and other programs and projects under its jurisdiction or carried out by a state or local government pursuant to a Federal delegation or approval so affect an NHL, the agency should consider all prudent and feasible alternatives to avoid an adverse effect on the NHL.

The Washington State Environmental Policy Act (SEPA, RCW 43.21C) and implementing rules contained in the Washington Administrative Code (WAC 197-11) also apply to this Project. These rules require the identification of historic, archaeological, and cultural resources listed on or eligible for the national, state, or local registers. Measures must be considered to reduce or control impacts to identified historic properties affected by a proposed project.

As the Project is located within the City of Seattle, all City of Seattle rules and regulations regarding historic preservation also apply. The standards for Seattle Landmark designation are outlined in the Seattle Municipal Code (Chapter 25.12):

SMC 25.12.350 Standards for designation.

An object, site or improvement which is more than twenty-five (25) years old may be designated for preservation as a landmark site or landmark if it has significant character, interest or value as part of the development, heritage or cultural characteristics of the City, state, or nation, if it has integrity or the ability to convey its significance, and if it falls into one (1) of the following categories:

A. It is the location of, or is associated in a significant way with, an historic event with a significant effect upon the community, City, state, or nation; or

B. It is associated in a significant way with the life of a person important in the history of the City, state, or nation; or

C. It is associated in a significant way with a significant aspect of the cultural, political, or economic heritage of the community, City, state or nation; or

D. It embodies the distinctive visible characteristics of an architectural style, or period, or of a method of construction; or

E. It is an outstanding work of a designer or builder; or

F. Because of its prominence of spatial location, contrasts of siting, age, or scale, it is an easily identifiable visual feature of its neighborhood or the City and contributes to the distinctive quality or identity of such neighborhood or the City.

#### 2.2 DETERMINATION OF THE AREA OF POTENTIAL EFFECT

In compliance with the NHPA, this study evaluates the NRHP eligibility of resources that are at least 50 years of age and are located within the APE or the "geographic area or areas within which (the) undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist" (36 CFR 800.16(d)). This study identifies issues relating to the proposed undertaking's potential effects on prehistoric resources in the APE.

After review of the Project design, the EPA, lead agency for Section 106 of NHPA for the Project, determined that Seattle City Light needed to conduct a cultural resources survey and Section 106 Technical Report for the Project. Cardno ENTRIX was requested to complete an archaeological survey and architectural resources inventory of the APE (Figure 2-1, 2-2). The APE includes areas of ground disturbing activity, as well as an adjoining staging area. The staging area is not located on Georgetown Steam Plant property (see shaded area on attached APE map). Staging activities will be shared with an adjoining property operator who is conducting cleanup operations on property they control. The staging area is paved, and no ground disturbance is expected in that area (see Figure 2-1).

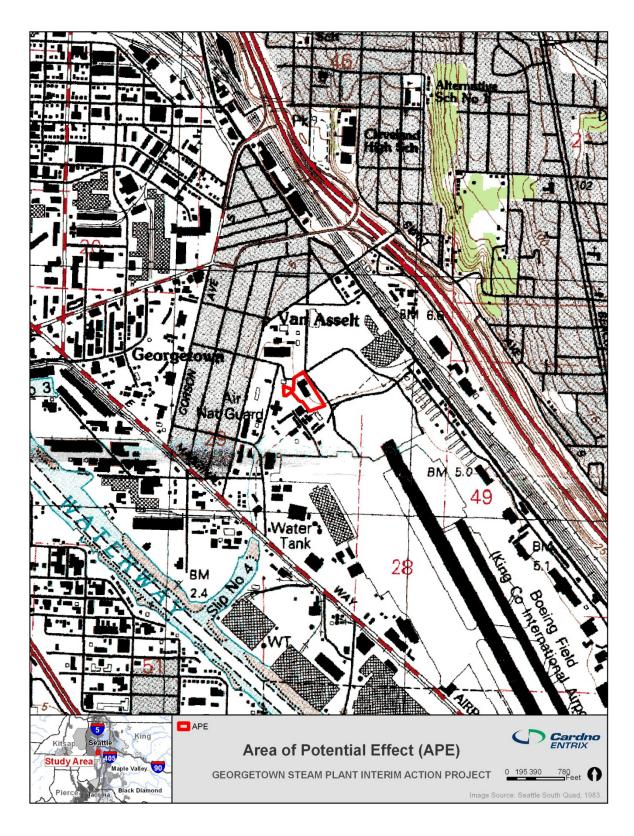


Figure 2-1. APE Map USGS Quad



Figure 2-2 APE Map Aerial View

#### 3.0 AFFECTED ENVIRONMENT

#### 3.1 GEOLOGY AND CLIMATE

The modern shape of the Puget Lowlands owes much of its character to its glacial legacy. The glacial ice carved long, narrow valleys during several advances. Glacial retreats deposited a considerable cover of till, outwash, and drift sediments. Vashon till capped the older glacial sediments and bedrock. Large boulders and lake sediments also were deposited as a result of glacial action. The poorly sorted and compact till deposits were interspersed with well-sorted outwash sands and gravels. Laminated clay beds formed at the bottoms of lakes and at glacier edges.

Lowland Puget Sound shorelines were established after the last glacial retreat about 13,000 years ago (Downing 1983:2–4). However, uplift was often twice the rate of sea level rise until about 6,600 years ago, finally stabilizing about 5,000 years ago. Between 13,000 and 5,000 years ago, considerable landform development also occurred. Erosion leveled the land at some locations and reformed it at others; sedimentation filled in valleys and buried some topographic features. The shorelines, deltas, and intertidal zones of today were formed over the past 5,000 years.

In addition to the uplift and sea level changes, the Puget Lowland is subject to tectonic events that produce landform alterations at specific locations. These landform-altering events occurred several times and have often affected relatively small areas (Alt and Hyndman 1984; 1995:361–401; Livingston 1969:22). For example, about 4,800 years ago, Mt. Rainier released a large mudflow on its north slope that slid down the White River Valley (now the Green River) as far as the southern reaches of the Duwamish River. This mudflow, the Osceola, was the largest of several Mt. Rainier mudflows that occurred during the Holocene.

The most characteristic landforms in the Puget Lowland are the coarse sand and gravel beaches, high bluffs, and ever-changing floodplain and delta systems (Downing 1983:4-13). The beaches and bluffs have developed through erosion of glacially deposited sediments. The inland trough margins also form high bluffs subject to erosion from various drainages. The floodplains and delta systems are located within the troughs carved by the glacial ice and are filled with eroded and water-sorted glacial debris. Regional beaches and delta systems are regularly affected by tidal action, and large sandpits and intertidal zones are characteristic of the region.

The Duwamish Valley Trough has remained close to grade and has been dominated by depositional events since the Pleistocene, with deltaic sedimentation migrating in a northern direction (Porter et al. 1965; Troost and Stein 1995). The Green River Trough begins to the south of the former junction of the Black River with the Duwamish River. At this location, the sedimentary history is complicated by catastrophic natural events such as the several mudflows from Mt. Rainier, extensive flood history, and historic alterations related to lowering the level of Lake Washington in the early 1900s (Dalan et al. 1981).

Within the Duwamish River floodplain, remnants of pre-Pleistocene geology<sup>1</sup>, such as the Tukwila Formation, are present as outcrops in several locations, as are remnants of the Renton Formation and other intrusive rocks (Nesbitt 1998). Some of the outcrops form promontories adjacent to and in the Duwamish floodplain, and major portions at the southern end of the Skyway Upland consist of the Tukwila Formation.

When the Project area and vicinity were first settled by non-Indians, the local topography included an ever-changing floodplain and delta systems, flanked by high bluffs, interspersed with buried and eroded topographic features from the earlier geologic periods. The effects of regular tidal action are present several miles upriver of the Project area. The occasional combination of high tide, heavy rain, and resulting high river levels caused extensive flooding in the lowlands of the Duwamish River.

However, persistent flood damage to farms along the Duwamish River and a desire for a more navigable shipping channel into Lake Washington led to a major effort to straighten the meandering Duwamish River channel and armoring of its banks (Cleveland High School 1949; Collins and Sheikh 2005; Phelps and Blanchard 1978; Boretleson et al. 1980). Although much of the straightening was completed in the early 1900s, work on channel stabilization or improvement continued for most of the next 100 years.

#### 3.2 FAUNA AND FLORA

A recent study of the historic aquatic habitats in the Duwamish River drainage provides a description of conditions in the mid-1800s, prior to extensive settlement by Euro-Americans. Reconstruction of the habitats was conducted by detailed study of early Government Land Office survey notes and other early survey documents (Collins and Sheikh 2005:8-14).

The Project area was located within what then was a Floodplain Forest (Collins and Sheikh 2005:22-27), with a predominantly freshwater tidal marsh and wetland nearby. Although the Duwamish valley bottom forest was diverse, the mainstem floodplain was dominated in frequency by red alder (*Alnus rubra*) and Oregon ash (*Fraxinus latifolia*) (Collins and Sheikh 2005:52-69). Few of the hardwood trees were large, as the western red cedar (*Thuja plicata*) showed overwhelming dominance, and even Douglas fir (*Pseudotsuga menziesii*) was abundant. Sitka spruce (*Picea sitchensis*) was dominant in and near tidewater locations.

The forests on alluvial terraces were less diverse and even more dominated by conifers (mostly Douglas fir) and secondly red cedar. Streamside forests were similar to valley bottom forests, with the streamside species both relatively common and large in diameter. They include all three conifers noted above plus bigleaf maple (*Acer macrophyllum*) and black cottonwood (*Populus trichocarpa*).

<sup>&</sup>lt;sup>1</sup> All promontories in the Puget Lowlands are known in local Indian lore as places from "before the change," a period when the world was different than it has been for generations, when animals were people. Since many of these promontories contain fossil strata, there is recognition in the legends of different past environments and other kinds of living beings.

#### 3.3 ARCHAEOLOGY

When the glaciers retreated, human groups entered the region, culturally adapting to the landform changes over the next several thousand years. Cultural adaptation in the region is generally expressed in terms of resource development and is often divided into three or four distinct time periods—e.g., Early Holocene (ca. 13,000–7,000 years ago), Middle Holocene (ca. 7,000–3,000 years ago), Late Holocene (ca. 3,000–300 years ago), and Recent or Ethnohistoric (300–100 years ago). In any given area, the beginning and ending dates for each stage vary, depending on resource availability, environmental change, and cultural factors. Some periods are better known archaeologically than others.

Cultural adaptation in the Puget Lowland from 13,000 to 3,000 years ago is not well known. The major reason for this deficiency appears to be related to physiographic development processes that impacted both the topography of older landforms and the archaeological deposits associated with them. Early and middle Holocene cultural activities that took place on the ridges, and at the margins or in the troughs, have been subject to natural erosion and burial. In some cases, recent cultural activity has had similar effects. In many instances, older prehistoric archaeological resources have been removed from the land surface. However, some ridges, areas of springs, and other upland features associated with troughs and depressions still may contain remnant deposits.

The only recorded site in the Duwamish Valley Trough that contained evidence of potentially older archaeological deposits was located on a promontory near the confluence of the Black River with the Duwamish River (Kennedy 1985; Larson and Lewarch 1995:1-21–22). Most of this site has been disturbed or destroyed.

Uplift and sea level changes, complicated by tectonism, have caused the submergence of most early and middle Holocene lowlands and beaches. It appears that most of the early Holocene cultural activities along the marine coast of Puget Sound were submerged with the coastline (Troost and Stein 1995). Investigations at sites 45KI428 and 45KI429 have demonstrated this effect quite clearly (Larson and Lewarch 1995).

Due to sedimentation, it is possible that early to middle Holocene cultural activities could be preserved in stratified cultural deposits in the trough landforms. These deposits may be of varying depth. There is no known archaeological evidence for preservation of cultural resources within the trough features of the Puget Lowland as these landform features have not been investigated for that purpose. But all of the geological evidence points toward potential cultural importance for the trough-like features. Any finds in these features will have major implications for archaeological research in the region.

Given the overall geological history of the Duwamish Valley Trough, one would expect to find a sequence of buried coastal prehistoric archaeological sites, with chronological progression moving from south to north in the valley. There is likely to be a more mixed cultural chronology along the confluence of inland rivers and streams and along the floodplain margins.

Archaeological evidence for human presence in the Puget Lowland within the past 3,000 years is comparatively abundant. Many late Holocene archaeological deposits have been discovered

along the present coastal zone or in associations with modern landform features near water (Larson and Lewarch 1995:Chapter 1). Several archaeological sites have been recorded in the Duwamish Valley and vicinity (Courtois et al. 1999:38–44). Most late Holocene archaeological sites can be associated with Lushootseed or Chinook place names (see following section), have been identified as habitation or use locations through ethnographic studies, and date within the past 100–300 years. Many other named places have been destroyed by urban development in the past 150 years; those remaining are in danger of being destroyed by additional development.

#### 3.4 ETHNOGRAPHY

An ethnographic study of the Indian people of the greater Seattle area was recently conducted for the Sound Transit Central Link Light Rail corridor, reaching from Northgate to SeaTac (Miller and Blukis Onat 2004). The ethnographic study provided base-line information about the language and culture of the several communities that were identified as Duwamish in early records and about their association with the Duwamish River drainage. This drainage once included Lake Washington.

The Duwamish people had major settlements in what is now the downtown area of Seattle. Along the Duwamish River, major settlements were located at the mouth of the Duwamish River, at the historic communities of Georgetown, Allentown (at the confluence of the Duwamish and Black Rivers), and Renton—the latter area being the former outlet of Lake Washington (Miller and Blukis Onat 2004:126-176). Permanent houses, resource camps, and graveyards were located at or near all these historic towns. An abundant fishery, including both freshwater fish and anadromous fish, was present in the Duwamish estuary and many miles upriver and into Lake Washington. There were shellfish beds along the marine shoreline. Marine and freshwater mammals were accessible on the lowlands and on the nearby uplands. Marshes of different types and shallow lakes and wetlands were present in the large estuary of the river, as well as along the floodplain. These were major sources of food and materials. Cedar, a major part of the material culture of the area, grew throughout the area.

The Miller and Blukis Onat (2004) study included all the place names first recorded by J. P. Harrington in 1910 and by T. T. Waterman in the early 1920s. These early ethnographers worked with elders and recorded place-name information on maps. The Harrington maps are hand drawn and do not represent the local geography. They simply show the sequence of place names along the Duwamish River. Waterman published a final map of place names in 1922 (Figure 3-1).

The several Waterman maps and field notes were reviewed and reassembled by Lushootseed speaking elder Vi Hilbert, ethnographer and linguist Jay Miller, and Whulshootseed speaker Zalmai Zahir and were published in 2001. The three authors added comments and additional information to the Waterman material, and Miller inserted the current Lushootseed-adapted International Phonetic Alphabet (IPA) orthography (Bates and Hilbert 1994; Hilbert et al. 2001).

For this Project, the ethnographic work focused on identification and mapping of places with Lushootseed names that might indicate the location of archaeological deposits. The place names

express important aspects of Lushootseed culture and economy. Most of the location names indicate some aspect of the setting (e.g., water orientation, presence of waterfowl, open spaces, and canoe passages).

#### **Place Names**

Using Hilbert et al. (2001) and Miller and Blukis Onat (2004), a list of place names in the Project vicinity has been assembled. The list gives numbers for the place names as indicated by Waterman (Figure 3-1) and Hilbert et al. 2001 (e.g., 111/138). The orthography and the Hilbert et al. (2001) authors' comments are presented in {}. Material from other sources, with orthography used by those sources, is also included and referenced. Most of the names have been entered into the King County Historic Preservation Program site database. The database reference number is included at the end of each place name discussion in **bold**. Additional comments by Miller and Blukis Onat are in [].

The list begins in the Georgetown area. Georgetown was a familiar area for Indian people and was a reference point for the early ethnographers. The first five locations listed show the resource wealth of this local area. Figure 3-2 shows several historic locations referenced in the list below. Numbers cross-referencing to Figure 3-1 numbers have been added to Figure 3-2. The Georgetown racetrack is the area labeled "The Meadows". The old Duwamish River channel is present in its entirety, as is the abandoned older channel that is cut by the new Duwamish Waterway. Two of three knolls south of the Waterway are also shown.

- 124/174: **tkba:'le** "spot where they place an aerial net for trapping ducks," {teqabali from teq "trap" -ali "place" = "trapping place"} for a spot on the west side of the Duwamish where a bend in the river washes the foot of the bluffs.
- 125/175: **tcE'btc'Ebid** "fir trees on the ground," {scebcebid "fir tree bark"} for a point of land on the east side of the river. They went there to get dry bark for fuel (Hilbert et al. 2001:119-120).
- **ctcáltcubed**, **tcábed** bark, probably was so called because timber is close to the river ("lots of bark) (Harrington 1910:Folder 36-2, 5).
- 126/176: **ta'litc** "frame for drying fish," {Talic} for a small creek entering the Duwamish from the west.
- 127/177: **tatL³qe'd** "head of the short cut," {TaTlqid} for a slough cutting across a point. At high tide, they made a short cut through a channel here, in going up the river in their canoes (Hilbert et al. 2001:119-120).

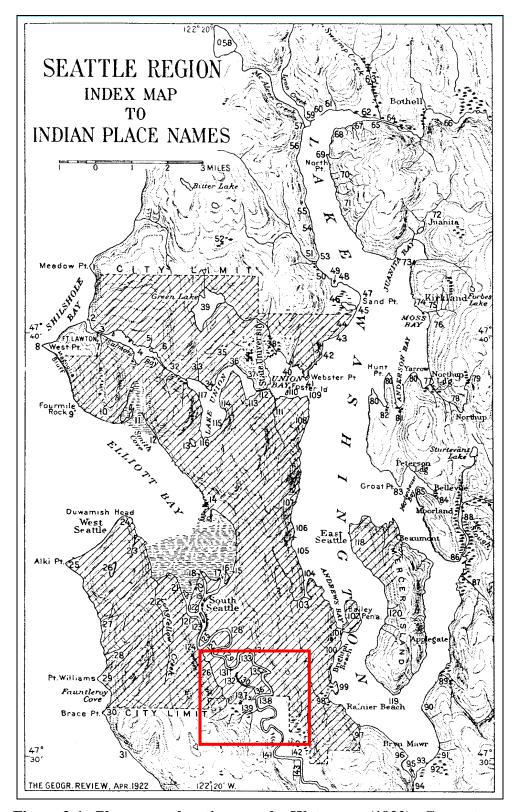


Figure 3-1. Place name location map by Waterman (1922). Georgetown and South Park are in the red box.

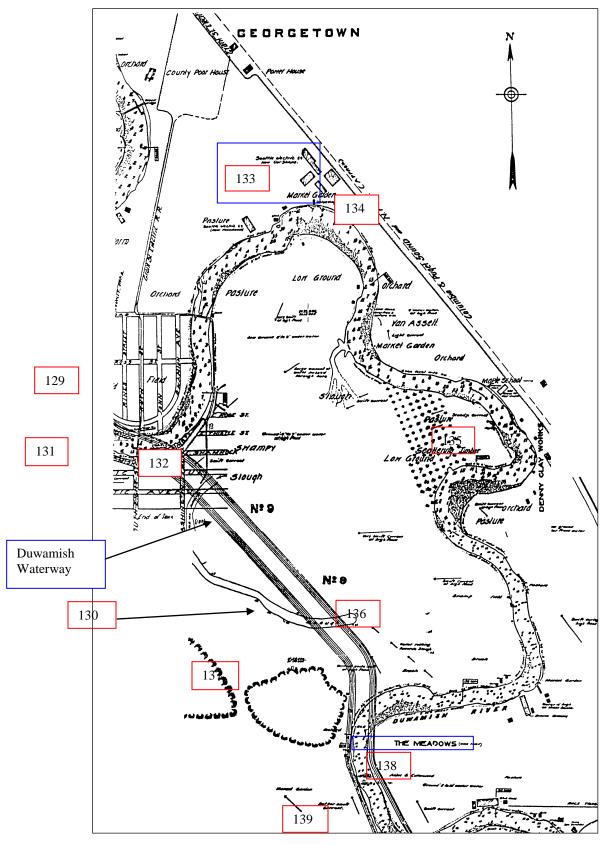


Figure 3-2. Georgetown to South Park in 1907 (Kielland 1907).

- t'at'alks Georgetown, right by Rainier Brewing Co Works (Harrington 1910:Folder 36-6). 07025
- 128/178: **Bia'ptEb** "ground dropping down" (bia'p "to fall"), {bi?abted} for a bank or cliff on the east side of the Duwamish. Material is continually falling from the bank here (Hilbert et al. 2001:119-120).
- **biáptam** (Harrington 1910:Folder 36-2, 5).
- 129/179: **ts³kwa'lad** "forked house post," {ceQGaled} for a place below Georgetown. The river forms curves suggesting the shape of this timber (Hilbert et al. 2001:119-120).
- **tskwalas** (Harrington 1910:Folder 36-2, 5). **07027**
- 130/180: **Lwalb** "abandoned," {*leGelb*} for a small channel across a flat on the west side of the new river. It is an old river channel where the river has changed its course; hence, the name. **07028**
- 131/181: **T³a'Lt³aLusid** "where there is something overhead across the path," { taltaluci "crossbeam"} for a place on the west bank of the river. The term in its literal sense signifies the cross beams in the roof of a house (Hilbert et al. 2001:119-120). **07029**
- 132/182: **hû tcsa'tci** "cut in two with reference to the hand," {?eCqaci "fingers are pulled"} for a place on the west bank of the river. Several legends cluster around this spot and Indians call it a "bad place," meaning that supernatural beings lurk here. **07030**
- 133/A183: <sup>Tu</sup>qwe'Lt1d "a large open space" situated on a large flat in a bend of the Duwamish. Called Q<sup>3</sup>Elqa'kubi<sup>u</sup> "proud or confident people." The village was where the old Georgetown race track used to stand (Hilbert et al. 2001:47, 121).

Figure 3-2 shows there may have been a village settlement at this location. The Meadows, a racetrack, was located two miles upstream. There is some confusion in placement of the racetrack that has entered the database in placing the village settlement here.

• **dokwelt** - right by Seattle Electric Co. machine shops (Harrington 1910:Folder 36-6). **07031**[The Seattle Electric Co. machine shops are shown in Figure 3-2 north of the farthest downriver bend.]

Somewhere near the base of Beacon Hill, overlooking Georgetown, there was a graveyard with burials suspended in the trees (Bass 1937:98–99).

• 134/184: **TEtc<sup>3</sup>gwEs** "brace, prop, upright supporting a rafter," {te*CGes* "standing up"} for a place where a lot of material caved down on a trail. I fancy that the name

came from some tree trunks involved in the landslide. **07032** [It also is possible a tree burial platform area may have been at this location.]

- 135/185: **cka'lapsEb** "neck" {ceqalapseb} for a narrow promontory about which the river makes a sharp turn. This was formerly an open place filled with kamass (lily bulbs) for food. **07033**
- 136/186: **hwa'pitc1d** "where one throws something" {xapiced "toss over something"} for a wide flat near the head of the old river channel. I do not know the reason for the name. **07034**
- 137/187: **qiyawa'lapsEd** the name suggests "eel's throat" {QeyuQebseb "throated"} to one of my informants (qiya'u, "eel"), for a place where there are three symmetrical knolls on an extensive flat on the west side of the river in South Park. The largest knoll is surmounted now by a large Catholic orphanage. **07035**
- 138/188: **Xo'bxobti** "canoe paddles" {XubXubtx} for a flat in a bend of the river on the east side. Ash trees here, which supplied wood for paddles, gave the place its name. **07036** [Figure 3-2: The Meadows at this location is the racetrack. Confusion in placement of the racetrack appears to have entered the database as to the location of the village settlement. However it is possible there were two settlements referenced to the racetrack, one here and one two miles downriver.]
- ---/189: tsitskad'b "clitoris," for a small promontory. 07412
- 139/190: **gwExhwallt**<sup>u</sup> this term suggests to my informants gwEx<sup>W</sup> "string" and alt<sup>u</sup> "house," {Gexal?tx "untie the house"} for a small creek entering the Duwamish from the west. I do not know the reason for the name (Hilbert et al. 2001:121). **07037**

#### 3.5 HISTORIC DEVELOPMENT

During the second half of the 19<sup>th</sup> century, Euro American settlement occurred at an exponential rate throughout Puget Sound due to reports of its fertile farmlands and plentiful streams and bays (Reinartz 1991). The California gold rush of the late 1840s provided the first significant wave of non-Native American settlers. Many who had come to California in search of gold would migrate to the Willamette Valley and then north to Puget Sound and the lower Duwamish.

In 1851, the first settlers in King County arrived in the Duwamish River Valley. The early settlers on the Duwamish were farmers who devoted their time to fencing, plowing, and establishing orchards (Bagley 1929). Led by Luther Collins and his family, they arrived on Puget Sound via the Oregon Trail. The Collins family established one of the first homesteads on a Donation Land Claim (of 640 acres) that would later become the community of Georgetown (Bagley 1929; Denny 1888). Other claims were soon filed and rapidly developed.

Along the lower Duwamish River, individual farmsteads grouped together and began the process of establishing identifiable communities. The settlers organized local and county governments,

and played an important role in early Washington Territory politics. Luther Collins was appointed as one of the first King County commissioners when the county was created by the Oregon Territorial government in December 1852 (Beaver 1963). Collins was later appointed to represent King County in the Oregon Territorial Legislature in 1853 and was also a delegate to the Monticello Convention to petition Congress for the establishment of a new "northern" territory out of the Oregon Territory (Beaver 1963). "Of the 17 men making up the initial King County government, almost one-third were from the Duwamish" (Reinartz 1991:19).

The early settlers in the Duwamish River Valley grew a variety of vegetables, fruits, and hops. They were attracted to the valley's fertile lowlands, where they established small family farms. Like elsewhere in King County, the valley farmers began to establish dairy farms during the late 19<sup>th</sup> century. By the early 20<sup>th</sup> century, the small family farms began to give way to larger truck gardens and dairy farms operated by Italian, Japanese, and Scandinavian immigrants.

#### **Establishment of Georgetown**

Located on the former mudflats along the Duwamish River, the community of Georgetown was established when John Pinnell, a saloon owner, built the Seattle Race Course in 1869. The track spurred developments of saloons and other forms of adult entertainment in the area. In 1883 a brewery was opened in the community to take advantage of the nearby hop fields. The brewery eventually became Seattle Brewing and Malting Company, at one point the world's sixth largest producer of beer. The City of Seattle annexed the community in 1910 (History Link 2000).

#### **The Georgetown Steam Plant**

In the early twentieth century the development of electric power was transforming the city of Seattle. The Seattle Electric Company, established in 1899, received an exclusive franchise to operate the street railway system in 1902. In order to expand the rail system, the company established a hydroelectric facility at Post Street in Seattle in 1902 and in Electron on the Puyallup River in 1904. Growth of railway system coupled with increased residential and industrial use led the Board of Seattle Electric Company to authorize construction of a plant in Georgetown in 1906. The company already had car barns and maintenance shops located in Georgetown and inexpensive land along the Duwamish River was readily available (Thomas 1977).

Construction on the plant began in 1906. The building was a state-of the art example of reinforced concrete construction designed to house turbines, powered by coal or oil, to turn water from the Duwamish River into steam for electrical generation. The electricity was initially used primarily to power the street cars but gradually residential and industrial use became more commonplace. The railway line was acquired by the city in 1919 and the plant became a secondary generation facility in the 1920s. The construction of new hydroelectric facilities throughout the Northwest rendered the Georgetown plant outdated. After the 1930s the GTSP was used primarily as a standby facility until its closure in 1977 (Thomas 1977).

#### Transformation of the Georgetown Neighborhood

Georgetown experienced a significant transformation with the channelization of the Duwamish. The straightening and deepening of the river and concurrent land reclamation efforts over the next two decades attracted numerous industries to the region, the most significant being the Boeing Company on the northeast bank of the Duwamish.

By the early 20<sup>th</sup> century, Seattle and county planners viewed the meandering Duwamish River as a hindrance to development of the region (Figure 3-3). Seattle's Municipal Plans Commission stated that: "One of the greatest obstacles in the way of its development is the winding course of the Duwamish River... The straightening of the river... will accomplish two things... It will permit the layering out of highways... and will lay the foundation for the creation of a great industrial harbor, at which factories and industries may be located and served by both rail and water facilities" (Zahler et al. 2006:8).

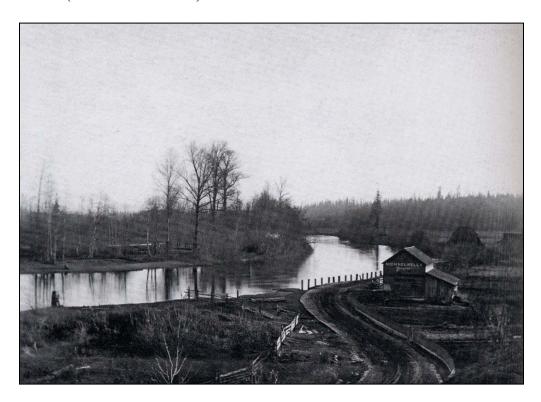


Figure 3-3. The Duwamish River before its straightening (courtesy Zahler et al. 2006).

The project was part of a larger, ambitious public works program that included constructing a canal between Elliot Bay and Lake Washington, reclaiming the tide flats south of downtown Seattle, and straightening the Duwamish River (History Link 2001b; HRA 2004). City of Seattle engineer, R H. Thomson was instrumental in the creation of the Duwamish Waterway Commission to sell bonds in order to fund the channeling of the river (Figure 3-4). Promoters claimed that a deeper, straighter river would benefit industrial development by reducing chronic flooding and increasing the ability to accommodate larger watercraft/barges. When channelization was completed by 1920, parts of South Park and Georgetown no longer fronted

the river, and South Park increased in size by more than 66 acres (History Link 2001b). The newly reclaimed flat lands were more conducive to industrial development. They offered industries lower construction costs, easier utility installments, and improved accessibility to railroad and trucking connections (History Link 2001b; HRA 2004).

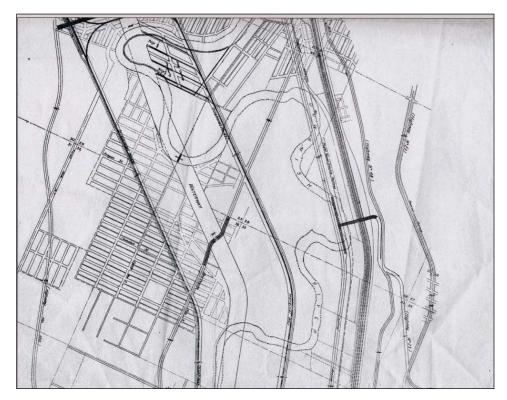


Figure 3-4. City of Seattle planner's 1911 drawings for the proposed straightening of the Duwamish (courtesy Zahler et al. 2006).

#### 3.6 PREVIOUS STUDIES

In August 2011, Cardno ENTRIX staff conducted a cultural resources records search for the Project area and vicinity at DAHP in Olympia, Washington. Located within one mile of the Project area are 4 NRHP historic resources and one previously recorded archaeological site.

The historic property 45K138 is located within the Project APE. The site, known as the Seattle Electric Company Georgetown Steam Plant, is listed on the NRHP under Criteria A and C. The 1906 Georgetown Steam Plant, a National Historic Landmark, represents important developments in the early history of both electricity and engineering in the United States.

Located approximately 0.25 miles north of the Project area, historic site 45KI239, the Old Georgetown City Hall, is also listed on the NRHP and Washington Historic Register under Criterion C. Constructed in 1909, the dark red brick two story building was the first building in Georgetown to have both hot and cold running water. The building housed the police department, the jail, the fire department, council chambers and city offices. The police, now part

of the Seattle Police Department, have operated out of the building since the beginning. Old Georgetown City Hall continues to be a reminder of the satellite communities that Seattle has absorbed over the years (Environmental Works 1983).

Approximately 0.5 miles east of the Project area lies historic property 45KI136. The site, known as the Maple Donation Claim, is listed on the WHR. The site was a donation claim, originally staked on September 14, 1851, and represents one of the first areas near Seattle to be settled by Euro-Americans. The farming of this area helped contribute to the founding of Seattle (Martin 1969).

Historic site 45KI259, the 14<sup>th</sup> Avenue South Bridge, is located approximately 0.5 miles south of the Project area. Constructed in 1931, the site is listed on the NRHP and the WHR under criterion C, and represented the only remaining Scherzer Rolling Lift bascule bridge in Washington State (Palmer and Palmer 1996, Soderberg 1980).

Running roughly NW-SE, archaeological site 45KI538 comes within approximately 0.25 miles of the Project area. The site consists of a 16.60 mile-long stretch of historic railroad dating to 1874. The railroad is a portion of the former Columbia & Puget Sound railroad and once stretched from Seattle to Franklin (Hudson 1996).

Several cultural resources investigations have been conducted in and along the Duwamish River floodplain. Most have been conducted either to the north (Campbell 1981; Lewarch 2000; Rader 1998; URS and BOAS 1987) or south (Blukis Onat 1997b, 2003; Dalan et al. 1981; Lewarch et al. 1996; LeTourneau 2004a, 2004b, 2004c; LeTourneau and Blukis Onat 2004; Luttrell 2001; Montgomery 1997; Nelson 2000) of the Georgetown/South Park vicinity. Of these, two investigations involved data recovery excavations at locations in the vicinity of ethnographic named places. The northernmost is the Duwamish No. 1 Site, 45KI123 (Campbell 1981; URS and BOAS 1987). It was a settlement and contained evidence of structures. The Carrossino Farmstead Property contains site 45KI703 and is located just west of Poverty Hill on the north bank of the Duwamish River, approximately 3 miles south of South Park (LeTourneau 2004a, 2004b, 2004c; LeTourneau and Blukis Onat 2004). This site appears to contain two temporally distinct components, both associated with intense burning. Materials from site 45KI703 are still being analyzed.

Six projects that have included archaeological monitoring have been conducted near Georgetown/South Park. One was conducted at the Georgetown Steam Plant in 2008 by ENTRIX, Inc. (Zuccotti et al. 2008). The project consisted of a surface and subsurface investigation of the Georgetown Steam Plant flume as part of the Lower Duwamish Waterway Superfund Site Project. No archaeological resources were located. Two are cell tower locations (Cole 2001a, 2001b) where no significant cultural resources were found. Two other projects were conducted in the Project vicinity; both were near or adjacent to the South Park Bridge. The first, by Roedel and Larson (2001) was archaeological monitoring of emergency repairs to South Park Bridge, on the west side of the Duwamish River. The repairs were done to structural damage to the bridge from an earthquake on February 28, 2001. The repairs required subsurface construction excavation to determine the structural integrity of columns supporting the bridge at its southern end. Larson Anthropological Archaeological Services (LAAS) staff monitored

excavation of two of the columns and found they were buried in historic deposits, "probably related to fill episodes associated with the construction of South Park Bridge" (Roedel and Larson 2001:3). The cultural material was determined to be non-significant. The second of these studies was conducted in 2004 as part of the Draft Environmental Impact Statement and Section 4 (f) Evaluation for the South Park Bridge Project (U.S. Department of Transportation et al. 2005).

#### 4.0 METHODS

#### 4.1 ARCHAEOLOGICAL METHODS

#### Research

As described in Section 3.6, Cardno ENTRIX Archaeologists conducted a background records search of the files available from DAHP in Olympia, Washington. Copies were made of site forms for all previously recorded sites in the Project area vicinity. In addition, copies were made of reports for all previous cultural resources surveys in the Project's immediate vicinity.

#### **Field Methods**

Cardno ENTRIX Archaeologists conducted a pedestrian inventory of the APE, defined in Section 2.2, on August 9, 2011. The inventory was conducted using 5-meter transects running north to south over the entire APE. Special attention was given where areas of disturbance uncovered subsurface soils. Visibility within the APE was poor. Approximately 50% of the APE was covered with gravels placed for the current Project for construction access; approximately 30% of the APE was covered with thick, matted grass; and approximately 20% of the ground surface within the APE was visible.

#### 4.2 HISTORICAL METHODS

#### Research

Cardno ENTRIX Architectural Historians reviewed the background records available from the DAHP in Olympia, Washington including inventory forms from previous surveys and NRHP and NHL nominations. Architectural Historians also obtained and reviewed copies of the addendum to the Condition Assessment and Historic American Engineering Record (HAER) report prepared for the Steam Plant in 2010 (Heideman, 2010).

#### Field Methods

A Cardno ENTRIX Architectural Historian conducted an inventory of the APE on August 10, 2011 to determine if there were any previously undocumented features associated with the Steam Plant in the APE. During the inventory, Cardno ENTRIX staff observed buildings and structures over 50 years old within the APE.

This section provides a summary of the cultural resources survey results.

#### 5.1 ARCHAEOLOGICAL RESOURCES

No archaeological resources were encountered during the surface inventory.

Visibility was low within the APE, primarily due to construction activities. Gravel for vehicle access had been placed over approximately 50% of the APE (Figure 5-1). A decontamination cell, approximately 15 x 45 x 3 feet, had been constructed in the southwest corner of the APE (Figure 5-2). A wheel wash, approximately 10 x 20 x 8 feet, has been installed at the southeast corner of the steam plant building (Figure 5-3). The center of the APE has already been scraped and used as a loading area for off-site soil removal (Figures 5-4 and 5-5). The staging area and haul road areas west of the ground disturbance area (i.e., off of GTSP property) were also surveyed. The areas were covered with concrete and no subsurface disturbance is expected.



Figure 5-1. Graveled access to the Georgetown Steam Plant, view to southeast (Cardno ENTRIX, August 2011).



Figure 5-2. Decontamination cell, view to northwest (Cardno ENTRIX, August 2011).



Figure 5-3. Installed wheel wash in roadway between building and fence, view to north (Cardno ENTRIX, August 2011).



Figure 5-4. Central soil loading area, view to southwest (Cardno ENTRIX, August 2011).



Figure 5-5. Central soil loading area, view to north (Cardno ENTRIX, August 2011).

#### 5.2 HISTORICAL RESOURCES

Architectural historian Jennifer Flathman conducted an inventory of the historical buildings and structures located within the project APE. The only resource within the APE is the NRHP/NHL/City of Seattle listed Georgetown Steam Plant. A summary of the features and history is provided below.

#### **Georgetown Steam Plant**

#### Physical Description

The Georgetown Steam Plant is a complex of buildings and structures situated in the Georgetown neighborhood of southwest Seattle, Washington. The plant historic listing includes the main Steam Plant, constructed in 1906, a poured concrete water reservoir, a pumping station located on the Duwamish Waterway north of Slip 4, and a former flume that connected the main plant to the head of Slip 4.

The Steam Plant is a reinforced concrete building, embellished with Neo-Classical Revival details (Figure 5-6 to 5-7). The plant is T-shaped in plan. The larger wing houses the boilers and measures 76 feet by 153 feet. The engine room measures 79 feet by 64 feet with a 36 foot extension at the northeast end. Details adapted from the Neo Classical Revival style include a cornice, belt course, and water table that are part of the concrete work. The concrete is incised to resemble pilasters that delineate the structural bays. Medallions incorporated into the concrete proclaim 1906 as the construction date of the building on the west façade. Fenestration on the building consists primarily of two over two divided light windows. A clerestory that features casement windows extends along the roofline of the Engine House wing.



Figure 5-6. Steam Plant, west elevation (Cardno ENTRIX, August 2011).



Figure 5-7. Steam Plant, south elevation (Cardno ENTRIX, August 2011).

#### Statement of Significance

The Georgetown Steam Plant is a former power generation facility. The 1906 reinforced concrete building houses examples of the world's first large-scale steam turbine and is nationally significant in electrical, mechanical and civil engineering development. The plant is also important in the history of urban power development in the United States. The plant is nationally significant under Criterion B as an example of the promotion, by nationally known engineer Frank B. Gilbreth, of fast track construction. The early use of reinforced concrete with Neo Classical Revival style details makes the building significant under Criterion C. Since its construction there have been only minimal alterations to the plant. In 1917, when the Duwamish River was straightened to facilitate industrial development in south Seattle, the plant lost its direct connection to the river which had served as both the source of water to produce steam and a location for cooling water. Between 1917-1919, connections to the reconfigured Duwamish Waterway were added to bring water to the plant to power the steam engines. During this same period, the flume was constructed to discharge non-contact cooling water from the plant building. Other alterations occurred in the mid 1930s when the exhaust stacks were removed to facilitate the construction of the King County Airport on the adjacent parcel. The complex was

entered into the NRHP in 1979 and listed as a National Historic Landmark in 1981. The City of Seattle designated the plant building as a City Landmark in 1984. The complex retains its integrity of design, setting, location, feeling, association, workmanship, and materials and remains eligible for listing in the NRHP, as a City of Seattle Landmark, and as a NHL.

#### 6.0 PROJECT EFFECTS

#### 6.1 ARCHAEOLOGICAL RESOURCES

The surface inventory did not result in the discovery of any archaeological resources.

#### 6.2 HISTORICAL RESOURCES

The historic properties within the APE evaluated for Project effects include the Steam Plant building. The criteria listed below were used to evaluate short-term and long-term effects to historic properties:

**Demolition or Alteration of a Property:** Demolition or extensive alteration of all or part of the resource.

**Isolation/Alteration of Surrounding Environment:** Temporary or permanent restrictions of access to a historic resource or a change in the setting of the property's setting.

**Traffic Congestion/Parking/Access:** Congestion arising from changes in traffic patterns, parking, and access to historic resources.

**Visual:** Removal of historical resources adjacent to a historic property or the introduction of modern construction that is out of character with or alters the resource's historical setting.

**Introduction of New Construction:** Addition of new construction that is not compatible with the existing architecture of historic resources.

**Structural Instability:** Introduction of vibration during construction or operation that would cause damage to historic resources.

**Noise:** Introduction of audible elements that are out of character with the historic resource and its established use such that its use may be altered or abandoned.

**Change of Use:** The change in use of a historic resource brought about by construction or operation-related activities that make it no longer physically or financially feasible or desirable to maintain the current use.

**Vibration:** Construction or operation techniques that would create vibrations such that a resource may experience damages such as the loosening of paint or mortar, cracking of mortar or plaster, weakening of structural elements, or crumbling masonry.

**Temporary Dirt/Unintended Damage:** Introduction of atmospheric elements that may alter or damage a historic resource.

**Neglect:** Neglect of a resource resulting in its deterioration or demolition.

#### **Construction Effects**

Short term/non-adverse effects

Short-term effects would include noise and dirt/unintended damage resulting from the use of heavy construction equipment. These effects are not adverse effects because they would be temporary and would only last the duration of the construction process.

#### Adverse Effects

**Steam Plant:** The Project will include the removal of soil from the ground surrounding the Steam Plant building. The greatest potential for long term adverse effects is due to vibration from equipment that could damage the windows or the building's structure. If the vibrations do not exceed 100 velocity dB (VdB) there should not be an adverse effect to the Steam Plant building.

Protective measures for the Steam Plant are discussed under Mitigation Measures in Section 7.0.

Table 6-1 provides a summary of effects to NRHP-eligible historic resources.

Table 6-1. Summary of Adverse Effects to Historic Resources Eligible for Listing in the NRHP

		Adverse Effects
Resource/Address	No Adverse Effect	Demolition/ Alteration
Steam Plant Building	Х	

#### 7.0 MITIGATION MEASURES

#### 7.1 ARCHAEOLOGICAL RESOURCES

As stated in Section 6.1, no archaeological resources were discovered during the archaeological inventory, and because no archaeological resources were located during subsurface investigations at the GTSP during a number of site investigations, the likelihood of archaeological deposits is very low. Therefore, the Project is not anticipated to have any effects on archaeological resources. However, due to low visibility within the APE it is Cardno ENTRIX's recommendation that monitoring for archaeological materials be conducted during all ground disturbance activities on GTSP property.

In addition, planning for the unanticipated discovery of archaeological resources should be addressed in an Unanticipated Discovery Plan which should be in effect during all ground-disturbing activities. This plan is provided in Appendix B and outlines the steps to be taken and the parties to be consulted in the event that archaeological resources are discovered during Project activities.

#### 7.2 HISTORICAL RESOURCES

Although the construction work is not expected to have an adverse effect upon the Steam Plant building, Cardno ENTRIX recommends that Seattle City Light employ specific actions to protect the building during the construction process. Onsite construction and oversight staff should be briefed on the nature of the building and should ensure materials and equipment do not come in contact with the building. A trained architectural historian should monitor construction when excavation work occurs within 20 feet of the Steam Plant building. Plywood should be placed over windows located near the excavation site. Cardno ENTRIX understands that a vibration monitoring plan has been developed in consultation with the City's structural engineer and that such monitoring will be conducted by the City. In the event the vibration tolerances are exceeded, the contractor will immediately reduce use of heavy equipment near the building to ensure that vibration tolerances are not exceeded.

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# APPENDIX A AGENCY CORRESPONDENCE

### APPENDIX B

## MONITORING AND UNANCTICIPATED DISCOVERIES PLAN

# CULTURAL RESOURCES MONITORING AND UNANTICIPATED DISCOVERIES PLAN Georgetown Steam Plant 2011 Interim Action Project, Seattle, Washington

#### **Objectives of Cultural Resource Monitoring**

The report detailing the results and recommendations of an archaeological and historical resources survey of the Georgetown Steam Plant property prepared by Cardno ENTRIX (August 2011) recommended that any soil disturbance at the property should be monitored by a professional archaeologist. To ensure that potential intact, buried archaeological resources are not inadvertently disturbed following discovery, the following procedures will be implemented during excavation.

#### **Procedures for Cultural Resource Monitoring During Excavation**

- A principal archaeologist who is a qualified professional archaeologist (per 36 CER Part 61) will be responsible for the archaeological monitoring effort. A monitoring archaeologist will be present on site to observe any soil excavation. The monitoring archaeologist will work under the direct supervision of the principal archaeologist.
- The principal archaeologist will be notified 5 days prior to the startup of excavation and will be updated weekly on excavation progress.
- The monitoring archaeologist will monitor the excavation and removal of deposits. The monitoring
  archaeologist will communicate with on-site personal to develop procedures for safely observing the
  excavation.

#### **Procedures for Cultural Resource Unanticipated Discoveries**

- If possible archaeological resources are encountered, the monitoring archaeologist will have the authority to immediately stop soil removal activities within the portion of the excavation where the archaeological resources are encountered. "Archaeological resources" are any material remains of human life or activities that are of archaeological interest.
- Following the finding of possible archaeological resources, the monitoring archaeologist will immediately notify the contractor, Integral, Seattle City Light (SCL), and the principal archaeologist of the discovery and work stoppage. This notification will be done as soon as possible but no later than four hours from the finding.
- Excavation shall, to the maximum extent possible, resume at an alternate location(s) a minimum of 20 feet from the location of the findings, and the monitoring archaeologist will continue to monitor the excavation.
- As soon as practical following unanticipated discovery, the principal archaeologist and monitoring archaeologist will examine the finds and consider their significance. If they are determined to be potentially significant, the principal archaeologist will notify the State Department of Archaeology and Historic Preservation (DAHP) and SCL. In addition, the principal archaeologist will seek authorization to recover the potentially significant archaeological resources. During this time, with consultation from the principal archaeologist, excavation activities shall, to the maximum extent possible, continue in the area of the finds, as long as the archaeological resources are protected.
- If the finds prove to be significant, a plan for their excavation will be prepared and submitted to DAHP for their expedited review and issuance of any required permit so that any mitigation of effects can be implemented with minimal delay to construction efforts.
- If human remains are discovered, excavation activities will cease immediately at the location and the principal archaeologist will notify the King County Medical Examiner for a determination of whether the remains are Native American. Within 24 hours of discovery of human remains, the principal archaeologist will also notify the Native American tribes with interest in the area, DAHP, SCL, and Integral. Human remains and associated funerary objects will be left in place, unwashed, and with minimal disturbance.

- If the King County Medical Examiner's assessment is that the remains are Native American, the principal archaeologist will be responsible for seeking authorization to recover the remains, including carrying out expedited consultations with the interested tribes to identify appropriate procedures for their removal and storage, and to arrange for repatriation of the remains. If the remains are not identified as being Native American, the Medical Examiner will take charge of the remains and excavation activities will continue.
- SCL shall make its best effort to ensure that employees, contractors, and consultants keep the discovery of any archaeological resources confidential, including but not limited to refraining from contacting the media, responding to media questions, or otherwise sharing information regarding the discovery with any member of the public.
- Prior to any monitoring activities, a safety plan will be prepared that details the safety requirements for the archaeological monitor. This plan will be in addition to the existing Integral site health and safety plan. Cardno ENTRIX site personnel will follow the Integral plan and respond to the Integral site safety manager at all times